



Reply to
Attention of:

DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT CORPS OF ENGINEERS
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For Immediate Release

Grand Prairie Area Demonstration Project

History/Overview of the Area

- Prior to the introduction of rice farming in the early 1900s, the Grand Prairie in eastern Arkansas consisted of more than 700 square miles of tallgrass flatland.
- This grassland served the residents of the area as pasture for livestock grazing and for the production of hay as winter food for the livestock.
- As the 20th century began, the grasslands were cleared for agricultural development and use.
- Parts of the Grand Prairie were allowed to grow into woodlands in the early 1900s.
- The soil structure of this flatland is that of thick beds of clay underneath a thin layer of topsoil. This particular topography historically is prone to drought with an annual average rainfall of only 52 inches.
- The Grand Prairie area covers most of Arkansas and Prairie counties and parts of Lonoke and Monroe counties.
- The White River to the east and the Arkansas River to the west serve as borders for the region. The Grand Prairie has as its northern border the Wattensaw Bayou. Perhaps its southern border can unofficially be said to be just south of the White River National Wildlife Refuge and near where the Arkansas and White Rivers converge, then flow into the Mississippi River.
- As prairies go, this one is standard with some forests filled with typical hardwoods and impermeable subsoil but tillable topsoil.
- Rice farming began in this area as a result of the ground's shallow claypan, which enables the soil to hold water.
- The prime source of groundwater for more than a century has been from a shallow aquifer below the topsoil known as the alluvial aquifer. The Grand Prairie area's farmers have relied on the alluvial aquifer since 1904 for crop irrigation and rice field flooding. In addition, the alluvial aquifer has been the primary source of water for industrial and commercial use since the latter half of the 1900s.

- A deeper aquifer known as the sparta aquifer has served the Grand Prairie area as its primary source of drinking water since the early 1900s.
- By 1915, some 10 years after rice farming began in the area, groundwater was already being tapped to flood rice fields and for commercial uses that together far exceeded the alluvial aquifer's ability to recharge.
- Recharge of an aquifer typically comes from several sources including rivers, streams, bayous, rainfall and percolation.
- Since 1937, the alluvial aquifer has been unable to recharge at a rate that would keep pace with the region's demand for water.
- This problem was documented in a project study in the mid-1980s by a team of officials comprised of the U.S. Fish and Wildlife Service (USFWS), the Natural Resources Conservation Service (NRCS), the Arkansas National Heritage Commission (ANHC) and the Arkansas Soil and Water Conservation Commission (ASWCC), among others.
- Further studies were conducted by multi-agency teams that included officials from the Arkansas Highway and Transportation Department (AHTD), the Waterways Experiment Station (WES) at Vicksburg, Miss., the U.S. Army Corps of Engineers (USACE), and the White River Irrigation District (WRID).
- The alluvial aquifer's depletion was officially established in the 1940s in government studies, which documented the problem.
- Without an adequate solution to the region's groundwater problems, the U.S. Geological Survey (USGS) and the National Water Management Center (NWMC) predict the alluvial aquifer will be dry by the year 2015.
- From these studies referenced above, the U.S. Congress in 1991 empowered the USACE to lead a Grand Prairie Area Demonstration Project (GPADP) with the help of the ASWCC, NRCS, and WRID to find and implement an effective solution to this 90-year old problem of groundwater resources depletion.
- Both the alluvial and the sparta aquifers meet the criteria and have been designated "critical" under Arkansas state law. To be deemed "critical" under this law, the aquifers have declined at least one foot per year for the last five years and have a saturated thickness of less than 50 percent of original saturation level.
- The solution to the Grand Prairie area's groundwater problems is a plan to develop a tailwater recovery system consisting of canals, pipelines and pumps to deliver excess water from the White River to on-farm water storage ponds.
- The plan was developed by the GPADP partners, the USACE – Memphis District, ASWCC, NRCS, and WRID.